



JFW/3663

Atty. Dkt. No. 029437-0111

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Chiaki SASAOKA  
Title: SEMICONDUCTOR LASER AND METHOD OF FABRICATING  
THE SAME  
Appl. No.: 10/549,447  
International Filing Date: 02/26/2004  
371(c) Date: 9/14/2005  
Examiner: Unknown  
Art Unit: 3663  
Confirmation Number: 5540

**INFORMATION DISCLOSURE STATEMENT**  
**UNDER 37 CFR §1.56**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Submitted herewith on Form PTO/SB/08 is a listing of documents known to Applicant in order to comply with Applicant's duty of disclosure pursuant to 37 CFR §1.56.

A copy of each non-U.S. patent document and each non-patent document is being submitted to comply with the provisions of 37 CFR §1.97 and §1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicant does not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

**TIMING OF THE DISCLOSURE**

The listed document is being submitted in compliance with 37 CFR §1.97(b), within three (3) months of the mailing date of the foreign office communication.

**RELEVANCE OF EACH DOCUMENT**

The document listed on the attached PT0/SB/08 was cited as being relevant during the prosecution of the corresponding Japanese application. A partial English translation of the Japanese Office Action of November 21, 2006, follows:

• Reason 1

The Scope of Patent Claims of this application does not satisfy the requirements stipulated in Article 36, Paragraph 6, Item 1 of the Japan Patent Law in point (A) below.

• Reason 2

The inventions relating to Claims 1–11 of this application are inventions which were described in publication a indicated under (B) below, which was distributed in Japan or abroad prior to the filing of this application, and therefore cannot receive a patent under Article 29, Paragraph 1, Item 3 of the Japan Patent Law.

• Reason 3

The inventions related Claims 1–12 of the present application could have been easily invented by a person with ordinary knowledge of technology in the field to which the inventions belong prior to the filing of this application based on the inventions recited in publications a–f under (B) below, which had been distributed in Japan or abroad prior to the filing of this application, and therefore cannot receive a patent according to the stipulations of Article 29, Paragraph 2 of the Japan Patent Law.

Note

(A)

The inventions relating to Claims 4, 7, and 12 comprise a “process of selectively removing the lamination film and forming a plurality of grooves extending in the resonator direction of the semiconductor laser within said lamination film.”

However, the Specification only states, “a pair of stripe-like element separation grooves 513 reaching the free-standing GaN substrate 501 are formed,” and “a structure is obtained shaped such that the side surface of the grooves is sloped toward the top of the LD structure from the free-standing GaN substrate 501, in the direction where the width between the grooves becomes smaller” (EMBODIMENT 1)), there being no statement or suggestion to the effect that this is a simple “groove.” Thus, the invention relating to Claim 12 is not described in the Detailed Description of the Invention.

The Specification does state, “the present invention forms crack propagation preventing grooves wherein all or part of the GaN semiconductor cladding layer containing Al is removed by selective growth or etching, thereby suppressing the formation of cracks during scribing or dicing,” but no element with a configuration wherein a portion of the cladding layer is removed is concretely described, so in view of the fact that the problem to be solved by the present application deals with the relationship between the cladding layer and crack formation, the specific configuration of this is essential for implementation.

Therefore, the Specification cannot be said to contain language that would allow implementation of a configuration wherein a portion of the cladding layer is removed.

(B)

a Japanese Unexamined Patent Application Publication  
2001-320120

b Japanese Unexamined Patent Application Publication  
2001-176823

c Japanese Unexamined Patent Application Publication  
H9-83081.

d Japanese Unexamined Patent Application Publication  
H10-98212

e Japanese Unexamined Patent Application Publication  
H5-217904

f Japanese Unexamined Patent Application Publication  
H3-166785

(REMARKS)

\* For Reason 3

Regarding Claims 1–11, see Cited Examples a–f.

Regarding Claim 12, forming the structure of a well known semiconductor laser (see cited example f) using a nitride semiconductor is no way a difficult matter, so the manufacturing process relating to Claim 12, as a method of manufacturing semiconductor lasers of well-known configuration, is not a special process.

The documents cited in the office action other than reference B6 were provided with Applicants' Information Disclosure Statement of September 14, 2005.

Applicant respectfully requests that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

#### **STATEMENT**

The undersigned hereby states in accordance with 37 CFR §1.704(d) that each item of information contained in the information disclosure statement was first cited in a communication from a foreign patent office in a counterpart application and that this communication was not received by any individual designated in 37 CFR §1.56(c) more than thirty days prior to the filing of the information disclosure statement.

The undersigned hereby states in accordance with 37 CFR §1.97(e)(1) that each item of information contained in this information disclosure statement was first cited in any


communication from a foreign patent office in a counterpart foreign application not more than three (3) months prior to filing of this Statement.


Although Applicant believes that no fee is required for this Request, the Commissioner is hereby authorized to charge any additional fees which may be required for this Request to Deposit Account No. 19-0741.

Respectfully submitted,

Date: December 15, 2006

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Substitute for form 1449/PTO		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		<b>Application Number</b>	10/549,447
Date Submitted: December 15, 2006		<b>Filing Date</b>	02/26/2004
(File as many sheets as necessary)		<b>First Named Inventor</b>	Chiaki SASAOKA
Sheet 1 of 1		<b>Art Unit</b>	3663
		<b>Examiner Name</b>	Unassigned
		<b>Attorney Docket Number</b>	029437-0111

**U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			

**UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Application Document	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Serial Number-Kind Code <sup>2</sup> (if known)			

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
	B1	JP 3-166785	07-18-1991	FURUKAWA ELECTRIC CO. LTD.		A

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>

Examiner Signature

Date Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.